ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Misael Cabrera
Director

via e-mail

August 17, 2016

FPU17-023

Ms. Catherine Jerrard
AFCEC/CIBW
706 Hangar Road
Rome, NY 13441

RE: WAFB – ADEQ Evaluation – ST012 – *Final Soil Vapor Extraction System/Steam Enhanced Extraction System [SVE/SEE] Operation and Maintenance [O&M], 2015 Third Quarter [3Q15] Performance Report, Former Liquid Fuels Storage Area, Site ST012, Former Williams Air Force Base, Mesa, Arizona*; prepared for Air Force Civil Engineer Center AFCEC/CIBW, Lackland AFB, Texas; prepared by Amec Foster Wheeler Environment & Infrastructure, Inc., Phoenix, Arizona; document dated July 28, 2016.

Dear Ms. Jerrard:

Arizona Department of Environmental Quality (ADEQ) Federal Projects Unit (FPU) and ADEQ contractor UXO Pro, Inc. reviewed the referenced document. ADEQ's evaluation is presented below:

Evaluation

1. ADEQ's evaluation is that this final version appropriately includes edits and comment responses.
2. ADEQ remains concerned that full contaminant containment was not achieved during the report time period. This concern is based upon perimeter well volatile organic compound (VOC) concentrations and light non-aqueous phase liquid (LNAPL) measurements.
3. ADEQ anticipates receiving a work plan to address the apparent significant LNAPL volume remaining within the Thermal Treatment Zone (TTZ).
4. ADEQ anticipates receiving a work plan to characterize and address VOCs and LNAPL outside the TTZ.
5. With respect to U.S. Air Force Response (Appendix P, Item 5) to ADEQ Specific Comment 5; Section 3.2.1.2.6.

   ADEQ evaluation: No mechanism or sufficient pressure gradient exists during SEE operations to recover LNAPL mobilized away from the TTZ. During steam injection, the drawdown pressure is small compared to the injection pressure and therefore only a small influence exists to pull the steam zone inward versus growth outward. Similarly, the steam zone pressure gradient to push mobilized LNAPL at and beyond the TTZ perimeter is large compared to the extraction well gradient to draw the LNAPL inward. During depressurization,

the pressure gradient exerted by the drawdown and the collapsing steam zone is much smaller than the previously applied steam injection pressure gradient. As a result, LNAPL pushed outward will not be pulled inward to extraction wells, as the inward pressure gradient will be much smaller than the previous steam injection outward gradient. This rationale applies to perimeter injection in both the LSZ and UWBZ.

6. With respect to U.S. Air Force Response (Appendix P, Item 10) to ADEQ Specific Comment 10a. Pages 3-58 and 3-59, Graphs 3-18 and 3-19.

   ADEQ Evaluation: The graphs (graphs 3-19 and 3-20 in the final report) were not updated as indicated and still show data only through mid-June 2015. Please provide corrected pages with the updated graphs.

Closure

ADEQ may add or amend our evaluation if evidence to the contrary of our understanding is discovered; if received information is determined to be inaccurate; if any condition was unknown to ADEQ at the time this document was signed; or if other parties bring valid and proven concerns to our attention.

Thank you for the opportunity to comment. Should you have any questions regarding this correspondence, please contact me by phone at (602) 771-4121 or e-mail miller.wayne@azdeq.gov.

Sincerely,

Wayne Miller
ADEQ Project Manager, Federal Projects Unit
Remedial Projects Section, Waste Programs Division

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	ADEQ Reading and Project File	